

CLAIMS

1. A device for excavating a mine shaft, comprising a pair of drums, each drum having a pair of regions, each region wound with one of a pair of hoist ropes; four refuse carriers, each attached to one of said hoist ropes and drive means for driving said drums to deliver two carriers at a time to a work site in the shaft.

2. A device as defined in claim 1 wherein the drive means includes a single drive motor and a transmission arrangement for driving both of said drums.

10 3. A device as defined in claim 1 wherein the hoist ropes on one drum are wound oppositely to the hoist ropes on the other drum.

15 4. A device as defined in claim 1 further comprising positioning means for positioning said carriers at said work site.

5. A device as defined in claim 4 wherein said positioning means provides four paths, each path for a corresponding carrier.

20 6. A device as defined in claim 5 wherein said positioning means includes four guide regions, each to receive one carrier.

7. A device as defined in claim 1 further comprising means for determining a difference in weight between the two carriers at said site.

25 8. A device as defined in claim 1 wherein each carrier includes a bucket.

9. A device for removing refuse material from a work site in a mine shaft, comprising a pair of drums, each drum having a pair of regions, each region wound with one of a pair of hoist ropes; four carriers for carrying the refuse material, each carrier being attached to one of said hoist ropes, drive means for driving said drums, wherein the device is operable to deliver, in

repetition, two groups of two carriers to the work site.

10.A device as defined in claim 9 wherein the drive means includes at least one drive motor and a transmission arrangement for driving both of said drums.

5

11.A device as defined in claim 9 wherein the hoist ropes on one drum are wound oppositely to the hoist ropes on the other drum.

10 12.A device as defined in claim 9 further comprising positioning means for positioning said

carriers at said work site.

13.A device as defined in claim 12 wherein said positioning means provides four paths, each path for a corresponding carrier.

15 14.A device as defined in claim 13 wherein said positioning means includes four sleeve regions, each to receive one carrier.

15.A device as defined in claim 9 wherein each carrier includes a bucket.

20 16.A device as defined in claim 9 further comprising means for determining a difference in weight between the two carriers at said site.

17.A method for excavating a mine shaft, comprising the steps of:

25 providing a pair of drums;

dividing each drum into a pair of regions;

winding each region with one of a pair of hoist ropes;

30 providing four refuse carriers and attaching each to one of said hoist ropes; and

driving the drums in order deliver two carriers at a time to a work site in the shaft.

18.A method as defined in claim 17 wherein the driving step includes the step of coupling both of said drums to a single drive motor and a transmission arrangement.

5

19.A method as defined in claim 17 further comprising the step of winding the hoist ropes on one drum opposite to the hoist ropes on the other drum.

10

20.A method as defined in claim 17 further comprising the step of positioning said carriers at said work site.

21.A method as defined in claim 20 wherein the positioning step includes the step of providing four paths, each path for a corresponding carrier.

15

22.A method as defined in claim 21 wherein the positioning step further includes the step of providing four guide regions, each to receive one carrier.

23.A method as defined in claim 17 further comprising the step of determining a difference in weight between the two carriers at said site.

20

24.A method as defined in claim 17 wherein each carrier includes a bucket.

25

25.A device for excavating a mine shaft, comprising a drum having a pair of regions, each region wound with one of a pair of hoist ropes; a pair of refuse carriers, each of which is attached to one of said hoist ropes and drive means for driving said drum to deliver the carriers to a work site in the shaft.